CLAIMS

1. Apparatus for transferring data between first and second networks via a central network therebetween, comprising:

a first interface coupled between the first network, which operates according to a Fibre Channel protocol, and the central network, which operates according to a protocol different from the Fibre Channel protocol, the first interface comprising a memory containing a look-up table that includes a second-network-destination-address, and being adapted to receive from a client on the first network an initial data-frame comprising the second-network-destination-address, and to derive a second-interface-address from the look-up table using the second-network-destination-address as an index to the table, and to concatenate the second-interface-address to the initial data-frame so as to form a concatenated data-frame, and to convert the concatenated data-frame to a plurality of sub-frames responsive to a length of the concatenated data-frame, each sub-frame comprising a respective counter, and to convey the plurality of sub-frames to the central network for delivery to the second-interface-address; and

a second interface coupled between the central network and the second network, which operates according to the Fibre Channel protocol, the second interface being adapted to receive the plurality of sub-frames at the second-interface-address, and to convey a respective acknowledgment of receipt of each of the plurality of sub-frames to the first interface, and to recover the initial data-frame from the plurality of sub-frames responsive to the respective counters, and to convey the recovered data-frame to the second network for delivery to the second-network-destination address;

wherein the first interface is adapted to resend one or more of the plurality of sub-frames to the second interface responsive to not receiving the acknowledgment of the respective sub-frame, and wherein the second interface is adapted to check if a resent sub-frame has already been received therein, and responsive thereto, to ignore the resent sub-frame.

2. Apparatus according to claim 1, wherein the second interface comprises a second-interface memory containing a second-interface look-up table that includes a first-network-destination-address, the second interface being adapted to receive from a second-network client on the second network a second-network initial data-frame comprising the first-network-destination-address, and to derive a first-interface-address from the second-interface look-up table using the first-network-destination-address as an index to the second-interface look-up table, and to concatenate the first-interface-address to the second-network initial data-frame to form a second-network concatenated data-frame, and to convey the second-network concatenated data-frame to the central network for delivery to the first-interface-address, and wherein the first interface is adapted to receive the second-network concatenated data-frame at the first-interface-address, and to recover the second-network initial data-frame from the second-network concatenated data-frame and to convey the recovered second-network data-frame to the first network for delivery to the first-network-destination address.

3. Apparatus according to claim 1, and comprising a central processing unit (CPU) which is coupled to the first interface and which is adapted to control the first interface.

4. Apparatus according to claim 3, wherein the CPU is

adapted to generate the look-up table in the memory.

5. Apparatus according to claim 1, wherein the first interface is adapted to set a length of each of the plurality of sub-frames to be no greater than a predetermined maximum transmit unit length of one of the networks.

6. Apparatus according to claim 1, wherein the protocol different from the Fibre Channel protocol comprises an Ethernet protocol.

7. Apparatus according to claim 1, wherein the memory comprises a content addressable memory.

8. A method for transferring data between first and second networks via a central network therebetween, comprising:

coupling a first interface between the first network, which operates according to a Fibre Channel protocol, and the central network, which operates according to a protocol different from the Fibre Channel protocol, the first interface comprising a memory containing a look-up table that includes a second-network-destination-address;

receiving an initial data-frame comprising the second-network-destination-address from a client on the first network at the first interface;

deriving from the look-up table a second-interface-address using the second-network-destination-address as an index to the look-up table;

concatenating the second-interface-address to the initial data-frame;

converting the concatenated data-frame to a plurality of sub-frames responsive to a length of the concatenated data-frame, each sub-frame comprising a respective counter;

conveying the plurality of sub-frames to the central

network for delivery to the second-interface-address;

receiving the plurality of sub-frames at the second-interface-address of a second interface coupled between the central network and a second network operating according to the Fibre Channel protocol;

conveying a respective acknowledgment of receipt of each of the plurality of sub-frames to the first interface;

resending one or more of the plurality of sub-frames from the first interface responsive to the first interface not receiving one or more of the respective acknowledgments of receipt;

checking if a resent sub-frame has already been received at the second interface;

ignoring the resent sub-frame responsive to the check;

recovering the concatenated data-frame from the plurality of sub-frames in the second interface responsive to the respective counters;

generating a recovered initial data-frame from the concatenated data-frame; and

conveying the recovered initial data-frame to the second network for delivery to the second-network-destination address.

9. A method according to claim 8, and comprising:

receiving a second-network initial data-frame comprising a first-network-destination-address from a second-network client on the second network at the second interface;

deriving from a second-interface look-up table comprised in a second-interface memory in the second interface a first-interface-address using the first-network-destination-address as an index to the second-interface look-up table;

concatenating the first-interface-address to the second-network initial data-frame;

conveying the concatenated second-network data-frame to the central network for delivery to the first-interface-address;

receiving the concatenated second-network data-frame at the first interface responsive to the first-interface-address;

recovering the second-network initial data-frame in the first interface; and

conveying the recovered second-network initial data-frame to the first network for delivery to the first-network-destination address.

10. A method according to claim 8, and comprising coupling to the first interface a central processing unit (CPU) which is adapted to control the first interface.

11. A method according to claim 10, and comprising generating the look-up table in the CPU.

12. A method according to claim 8, wherein converting the concatenated data-frame to a plurality of sub-frames comprises setting a length of each of the plurality of data-frames to be no greater than a predetermined maximum transmit unit length of one of the networks.

13. A method according to claim 8, wherein the memory comprises a content addressable memory.